ASSOCIATION FOR **MAXIMUM SERVICE TELEVISION, INC.**

MSTV

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September 5, 2007

Via Electronic Filing

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12 Street, SW
Washington, DC 20554

Re: Notice of Ex Parte Communication,
ET Docket Nos. 04-186, 02-380

Dear Ms. Dortch:

On September 4, 2007, Mr. Bruce Franca and Mr. Victor Tawil of the Association for Maximum Service Television (MSTV) met with Mr. Julius Knapp, Mr. Alan Stillwell, Mr. Bruce Romano, Ms. Geraldine Matise, Mr. Ron Chase, Mr. Harry Wong, Mr. Saurbh Chhabra, Mr. Hung Le, and Mr. Mark Settle of the Office of Engineering and Technology. Mr. Steve Martin and Mr. Steven Jones of the OET's Laboratory Division also attended by videoconference. Technical matters relating to the above-captioned proceeding were discussed. The attached slide presentation was handed out and briefly discussed.

Respectfully submitted,

Bruce Franca
VP, Policy and Technology

cc: Mr. Julius Knapp
Mr. Alan Stillwell
Mr. Bruce Romano
Ms. Geraldine Matise
Mr. Ron Chase
Mr. Harry Wong
Mr. Saurbh Chhabra
Mr. Hung Le
Mr. Mark Settle
Mr. Steve Martin
Mr. Steven Jones

Technical Discussion of "White Space" Issues

15.209 Limits

- MSTV provided information and analysis on inadequacy of current 15.209 limits
  - Two Laboratory Studies by CRC submitted into the record
  - IEEE 802.22 provided information on subject
- Simple "No Brainer" Analysis shows 15.209 limit does not comply with required D/U ratios for DTV receivers
  - 200 uV/m or 46 dBu limit is greater than the 41 dBu value of DTV station contour
  - D/U for weak signal condition is +20 dB
  - Limit worked before because TV was restricted band (no devices allowed); interfering signals were narrow band; and analog signal was 23 dB higher than digital signal (64 vs. 41dBu)

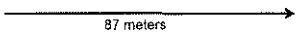
15.209 NOT APPROPRIATE

Prohibit Use of Adjacent Channel

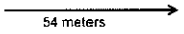
- MSTV provided information and analysis on adjacent channel interference that shows adjacent channels can not be used inside a TV station's contour
- OET and other receiver measurements show use of first and second adjacent channels problematic
- Most Recent OET Report and measurements with regard to prototype devices also shows adjacent channels can not be used
- OET measured 2 meter interference distance with Band Pass Filter and up to 52 meters without filter
  - BPF reduced device power by 14 dB to about 6 milliwatts (8 dBm) and DTV signal was (-63.5 dBm) more than 20 dB above TOV
  - 2 m interference distance for 8 dBm device is same as 10 m interference distance for 100 mW device with DTV signal at -64.5 dBm and interference distance is more than 80 m at TOV
  - Yield potential adjacent channel interference in 80% of TV service area
  - Unlikely that BPF performance could be achieved across all channels

Results are Questionable

- Same Path, Same Propagation Condition
  - Co- channel interference. Distance 87 meters
    - D/U ratio = +15 dB



  - Adjacent Channel. Distance 54 meters
  - D/U ratio = -35 dB



  - D/U difference 55 dB. How do you explain the 55 dB loss between the two tests

Over-the-Air Interference Tests

- Report Contains Contradictory and Simply Incorrect Statements:
  - "simple interaction scenario chosen for examination ... under premise that the results can serve as baseline for modeling more complex scenarios."
  - "test should be considered anecdotal in nature and the results used accordingly."
  - "scenario ... can be considered to be near "worst-case" in that it utilized an unobstructed line-of-sight (LOS) propagation path ... main-beam coupling was assumed between the antennas and they were restricted to same elevation plane."

Over-the-Air Interference Tests

- This test was NOT an Unobstructed "Line of Sight" Path
  - LOS path loss would actually be lower than "free space" due antenna gain of receive antenna – NOT 40 dB GREATER
  - Ground Reflections are generally modeled as a Two-Ray Model and NOT a Line of Sight or Free Space model
  - Test set-up clearly did not clear first Fresnel zone
- "For low antenna heights the effects of the close proximity between the Earth and the antenna produce a strong interaction between the antenna and the ground. The antenna pattern performance is vastly different than if the antenna were in free space."
  - See NTIA Report TR-07-449 "Propagation Loss Prediction Considerations for Close-in Distances and Low-Antenna Height Applications"

Over-the-Air Interference Tests

- This scenario is not a "free space", "worst-case" or a "near worst-case" scenario
  - Co-channel D/U for DTV is between +15 and +20 dB
  - If (D)esired DTV signal is -63.5 dBm then the (U)ndesired signal must be less than -78.5 to -83.5 dBm
- Free space path loss for a distance of 87 meters at 569 MHz (ch. 30) would yield an undesired signal of -44 dBm almost 40 dB higher than D/U derived value
  - FS= 32.44 +20log(569) +20log(.087)= 66 dB
  - An unlicensed device operating at 22 dBm – 66 dB Free space loss would create a field of -44 dBm at 87 meters

NOT FREE SPACE CONDITION

Over-the-Air Interference Tests

- This scenario is not a "free space", "worst-case" or a "near worst-case" scenario
- Propagation path losses of an additional 40 dB do not suggest "direct coupling" or "line-of-sight" conditions
- TV reception antenna used in test does not reflect gain or height of typical television antenna
  - Received signal power is proportional to square of antenna height strength using the Egli propagation model cited in the OET receiver report
  - Height and gain corrections would result in an effective 20 dB increase in distance
- DTV signal was more than 20 dB higher that "worst-case condition" condition

NOT FREE SPACE CONDITION

Sensing

- Coalition proposed -114 dBm
  - Other than "30 dB better" than TOV and "more than sufficient" statements
  - No data or analysis submitted to support -114 dBm value
- IEEE 802.22 Value of -116 dBm based on:
  - Geolocation (GPS) requirement to ensure that device is located outside contour
  - Sensing based on *receiving antenna located outside* AND at *antenna height of 10 meters*

Sensing

- Even ignoring geo-location requirement, IEEE value based on sensing antenna at 10 meters and outdoors with no building attenuation (See IEEE 802 comments)
  - Sensing level must be adjusted by these factors
- FCC Receiver Report (see Table 2-4)
  - States that an antenna height difference of 2m to10m is a factor of 14 dB (based on Egli propagation model) and suggests a building loss "example" of 5 dB
- IEEE 802.22 Value of -116 dBm adjusted for 2m height and indoor operation is -135 dBm

Sensing

- MSTV measurements show levels as low as -126 dBm are possible
- -126 dBm was the limit of measuring equipment and set-up

Part 15 is premised on non-interference –
None of the proposed sensing levels meets this standard